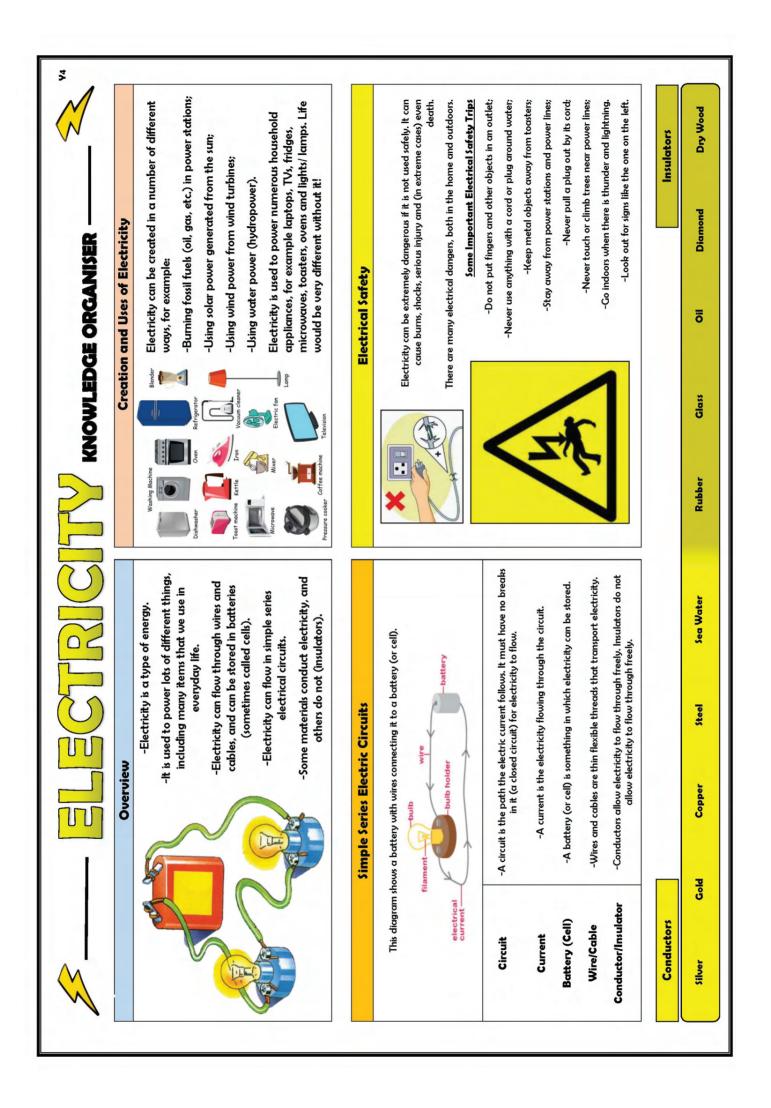
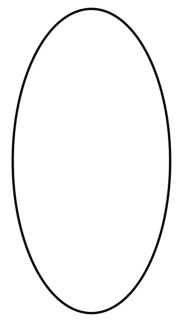
Science - Autumn Term 1	
	Electricity
What is electricity?	Answer
What common appliances use electricity?	Answer
Can you explain what conductors and insulators do?	Answer
What equipment do you need to construct an electrical circuit?	Answer
How does a simple circuit work?	Answer
Can you identify any dangers associated with electricity in the home?	Answer



National curriculum	Electricity
Year 4	identify common appliances that run on electricity
Year 4	construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers
Year 4	identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery
Year 4	recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit
Year 4	recognise some common conductors and insulators, and associate metals with being good conductors





Before starting the topic, add what you already know.

## What is this picture telling me?



What is electricity?	Answer
What common appliances use electricity?	Answer
Can you explain what conductors and insulators do?	Answer
What equipment do you need to construct an electrical circuit?	Answer
How does a simple circuit work?	Answer
Can you identify any dangers associated with electricity in the home?	Answer

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	Show what you know. Recall two things on the topic.	Connect - can you link this to one more thing that you know.
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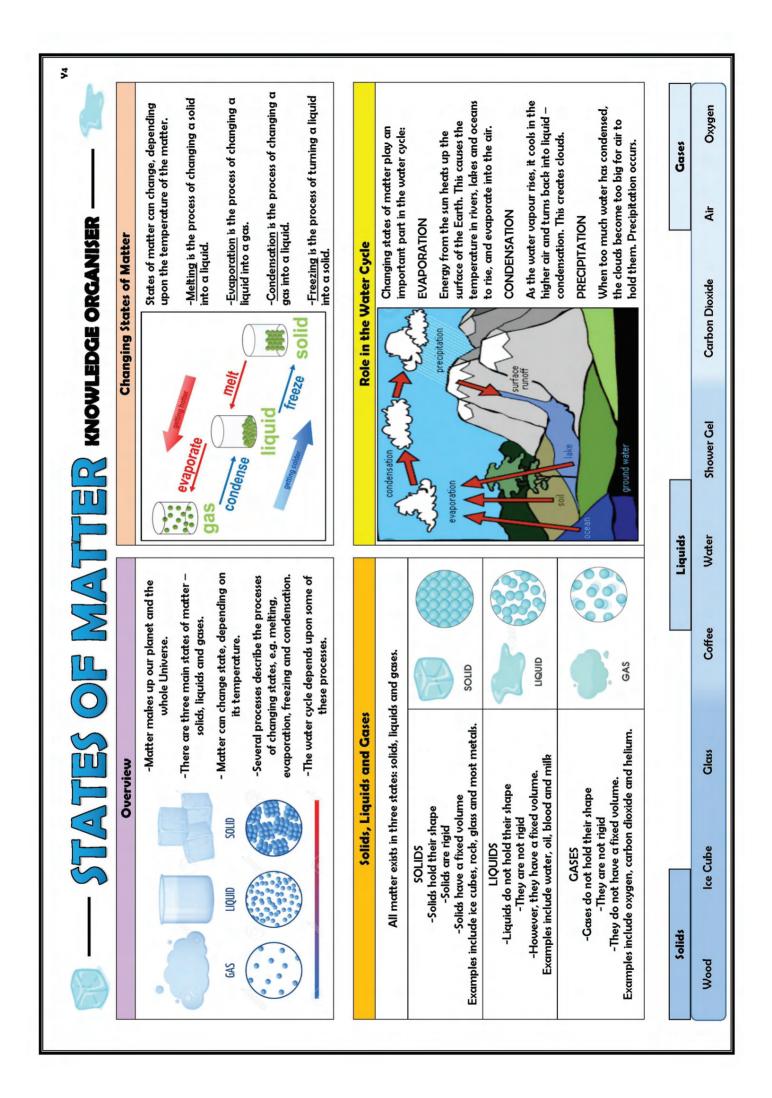
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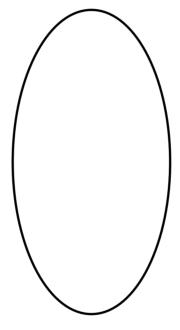
	Show what you know. Recall two things on the topic.	Connect - can you link this to one more thing that you know.
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Science - Autumn Term 2		
States of Matter		
What does 'States of Matter' mean?	Answer	
When does a 'State of Matter' change?	Answer	
Can you explain how evaporation and condensation are connected?	Answer	
What is meant by a solid?	Answer	
Can you describe what a gas is?	Answer	
Can you name a gas, a liquid and/or a solid?	Answer	



National curriculum	States of matter
Year 2	identify and compare the suitability of a variety of everyday mate-rials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses
Year 2	find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching
Year 4	compare and group materials together, according to whether they are solids, liquids or gases
Year 4	observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this hap-pens in degrees Celsius (°C)
Year 4	identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature





Before starting the topic, add what you already know.

## What is this picture telling me?



What does 'States of Matter' mean?	Answer
When does a 'State of Matter' change?	Answer
Can you explain how evaporation and condensation are connected?	Answer
What is meant by a solid?	Answer
Can you describe what a gas is?	Answer
Can you name a gas, a liquid and/or a solid?	Answer

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	Show what you know. Recall two things on the topic.	Connect - can you link this to one more thing that you know.
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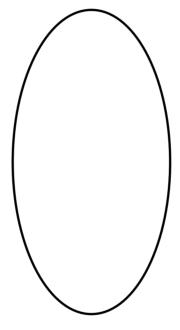
	Show what you know. Recall two things on the topic.	Connect - can you link this to one more thing that you know.
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Scienc	e - Spring Term 1
	Sound
How does sound travel?	Answer
What do we call the measure used to tell how load or quiet a sound is?	Answer
What happens to sound as we move further away from its source?	Answer
What happens when sound hits the ear?	Answer
What does the pitch of a sound describe?	Answer
What is meant by the term the 'source of the sound'?	Answer

То	pic: Sound	Ryefield Primary Sc Year: 4	Julie - Scienc	Strand: Physics
10				Strand: Physics
What should I already know?			Diagrams	
Sounds ca	s one of my five senses. In be combined using mu word <b>vibration</b> means.	isical instruments.	Pitch: • High pitch s waves.	sounds are created by short sound
	What will I know by the	e end of the unit?		<b>d</b> sounds are created by long <b>sound</b>
What is a sound?	A thing that can be here The object that makes source.	ard. the sound is called the		long sound waves create a
How is a sound made?	<ul><li>vibrate and the air v</li><li>These are called sou</li><li>If an object is making</li></ul>	the air around the object <b>/ibrations</b> enter your ear.	• The further	you are to the source of the sound, the sound will be. r away you are from the source of the quieter the sound will be.
How do sounds <b>travel</b> ?	<ul><li>air, water, glass, stor</li><li>For example, if some</li></ul>	through a <b>medium</b> (such as ne, and brick). body is playing music in the sound can travel through the		quieter louder
How do we hear		ates, the air around it vibrates ir can also be known as sound		Vocabulary
sounds?	waves.	an also be known as sound	amplitude	a measure of the strength of a sound wave
	• The sound waves tra	evel to the ear and make the	decibel	a measure of how loud a sound is
	<ul> <li>eardrums vibrate.</li> <li>Messages are sent to the brain which recognises the vibrations as sounds.</li> </ul>	electricity	a form of <b>energy</b> that can be carried by wires and in used for heating and lighting, and to provide power for devices	
	$\sim$	$\sim$	energy	the <b>power</b> from <b>sources</b> such as <b>electricity</b> that makes machines work or provides heat
	0		frequency	a measure of how many times per second the <b>sound wave</b> cycles
How do	Pitch:		medium	something that makes possible the transfe of energy from one location to another
sounds change?		is how <b>high</b> or <b>low</b> it is. mouse has a <b>high pitch</b> .	pitch	how high or low a sound is
cnange?	<ul> <li>A roar of a lie</li> <li>Volume:</li> <li>The volume of a source</li> </ul>	on has a <b>low pitch.</b> Ind is how <b>loud</b> or <b>quiet</b> it is.	power	<b>Power</b> is energy, especially electricity, that is obtained in large quantities from a fuel <b>source</b> and used to operate lights, heating, and machinery
		eated by a little amount of <b>nd wave</b> is created which	sound waves	invisible waves that travel through air, water, and solid objects as vibrations
	doesn't <b>travel</b> far. T	his makes a <b>quiet</b> sound.	source	where something comes from
		f a hammer is used with small nergy and so creates a quiet	transmit	to pass from one place or person to another
	noise.		travel	how something moves around
		s of <b>energy</b> makes a powerful	vibrations volume	invisible waves that move quickly how <b>loud</b> or <b>quiet</b> a sound is
		erefore a <b>loud</b> sound. smashing tap of a hammer is	volume	
	used with lots of energy and so creates a			Investigate!
How do we measure sound?	is. <ul> <li>Decibels measure h</li> </ul>	s the number of times per	<ul><li>Which one</li><li>Which mat defender?</li><li>Make musi</li></ul>	al jars with different volumes ofwater. creates the highest pitch? cerial would make the best sound How can you investigate this? ical instruments using different length w do their pitches differ?

National curriculum	Sound
Year 4	identify how sounds are made, associating some of them with something vibrating
Year 4	recognise that vibrations from sounds travel through a medium to the ear
Year 4	find patterns between the pitch of a sound and features of the object that produced it
Year 4	find patterns between the volume of a sound and the strength of the vibrations that produced it
Year 4	recognise that sounds get fainter as the distance from the sound source increases





Before starting the topic, add what you already know.

## What is this picture telling me?

How does sound travel?	Answer
What do we call the measure used to tell how load or quiet a sound is?	Answer
What happens to sound as we move further away from its source?	Answer
What happens when sound hits the ear?	Answer
What does the pitch of a sound describe?	Answer
What is meant by the term the 'source of the sound'?	Answer

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	Show what you know. Recall two things on the topic.	Connect - can you link this to one more thing that you know.
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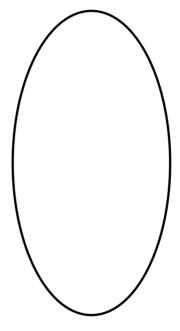
	Show what you know. Recall two things on the topic.	Connect - can you link this to one more thing that you know.
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Scienc	e - Spring Term 2
C	lassification
What does the word habitat mean?	Answer
What is meant by natural changes?	Answer
What is meant by human changes?	Answer
Can you name the seven life processes for any living thing?	Answer
Can you explain what the 'greenhouse effect' is?	Answer
What are some impacts to living things if an environment changes?	Answer

Living Things and their Habitats	• The bill	Core Learning	<b>Core Learning</b> The billions of different kinds of living things ( <b>organisms</b> ) on earth have
Year 4 - Science		the pillions of altherent kinas of invirig mings ( <b>organisms</b> ) of ear been divided up, by scientists, into groups according to their similarities and differences. This is known as <b>classifyina</b> .	y millings ( <b>organisms</b> ) on earning groups according to their nown as <b>classifvina.</b>
<u>Vocabulary Dozen</u>	<ul> <li>Classify</li> <li>about</li> </ul>	Classitying living things into groups allows about what makes each species <b>unique</b> .	Classitying living things into groups allows scientists to learn more about what makes each species <b>unique</b> .
<b>Organism -</b> An individual living thing, such as a plant, an animal, or a bacteria. <b>Classifying -</b> To put into groups according to things that are similar. <b>Unique -</b> Being the only one of its type.	<ul> <li>There are known</li> <li>There are known</li> </ul>	There are many different classes of animal. Th are known as the 'class' <b>vertebrates</b> . These ar mammals, birds, fish, reptiles and amphibians.	There are many different classes of animal. Those with backbones are known as the 'class' <b>vertebrates</b> . These are then grouped into mammals, birds, fish, reptiles and amphibians.
Vertebrate - Having a backbone. Invertebrate - Without a backbone.	<ul> <li>Inverte snails a</li> </ul>	<b>Invertebrates</b> , animals without bac snails and slugs and worms.	<b>Invertebrates</b> , animals without backbones, are arachnids, insects, snails and slugs and worms.
	Humar and dr dogs a	Humans fall into the <b>mammal</b> class as the and drink milk when they are babies. Wh dogs and hedgehogs are also mammals.	Humans fall into the <b>mammal</b> class as they have hair on their bodies and drink milk when they are babies. Whales, dolphins, bats, cats, dogs and hedgehogs are also mammals.
<b>Food chain</b> - A series of living beings in which each serves as food for the next. <b>Energy</b> - The ability to have force or power or to do work.	A habit     provide	A habitat is the non living environment su provides space, shelter, food and water.	A <b>habitat</b> is the non living environment surrounding a living thing. It provides space, shelter, food and water.
Producer - A living thing that makes its own food. Consumer - A living thing that cannot make its own food and so received its energy through consuming (eating) other plants or animals.	An ecc habita world.	<b>system</b> is made up of the liv t. An ecosystem can be am	An <b>ecosystem</b> is made up of the living organism and the non living habitat. An ecosystem can be any size from a tree to the whole world.
Classifying Plants and Animals	Eood c     produc     (secon	Food chains are a map of the flow oroducer) through consumers, (pri (secondary consumers).	Food chains are a map of the flow of energy from a plant (primary producer) through consumers, (primary consumers) and hunters (secondary consumers).
Animals can be sorted, or classified, in a number of different ways. A 'branched' diagram or a venn diagram, like those shown below, are just two examples.		Classification of Animals Vertebrates	Classification of Annese Classification of Annese These are annow that do not here a teachore
yes Swims Feathers No Hen no Legs no Snake human bat human bat	These are Reprised Are cold blooded. (Snake, Crocodile)	Are grown and a second and a se	Contract     Contract     Contract       Protectad     Protectad     Contract       Soly of all species     Soly of all species     Soly of all species       Soly of all species     Soly of all species     Soly of all species       Soly of all species     Soly of all species     Soly of all species       Soly of all species     Soly of all species     Soly of all species       Soly of all species     Soly of all species     Soly of all species       Soly of all species     Soly of all species     Soly of all species       Soly of all species     Soly of all species     Soly of all species       Soly of all species     Soly of all species     Soly of all species       Soly of all species     Soly of all species     Soly of all species       Soly of all species     Soly of all species     Soly of all species       Soly of all species     Soly of all species     Soly of all species       Soly of all species     Soly of all species     Soly of all species       Soly of all species     Soly of all species     Soly of all species       Soly of all species     Soly of all species     Soly of all species       Soly of all species     Soly of all species     Soly of all species       Soly of all species     Soly of all species     Soly of all species       Soly of all species     Soly of
Branched Diagram	Have feathers and wings. Have beaks and lay eggs. Are warm blooded. (Wren, Swan)	Ha Feed Are (C	Cov Mustry and Mintage A M

National curriculum	Living things and habitats: classification
Year 2	explore and compare the difference between things that are living, dead, and things that have never been alive
Year 2	identify that most living things live in habitats to which they are suited and describe how different habitats provide the basic needs of different kinds of animals and plants, and how they depend on each other
Year 2	identify and name a variety of plants and animals in their habitats, including micro-habitats
Year 2	describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food
Year 4	recognise that living things can be grouped in a variety of ways
Year 4	explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment
Year 4	recognise that environments can change and that this can sometimes pose dangers to living things





Before starting the topic, add what you already know.

## What is this picture telling me?



What does the word habitat mean?	Answer
What is meant by natural changes?	Answer
What is meant by human changes?	Answer
Can you name the seven life processes for any living thing?	Answer
Can you explain what the 'greenhouse effect' is?	Answer
What are some impacts to living things if an environment changes?	Answer

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	Show what you know. Recall two things on the topic.	Connect - can you link this to one more thing that you know.
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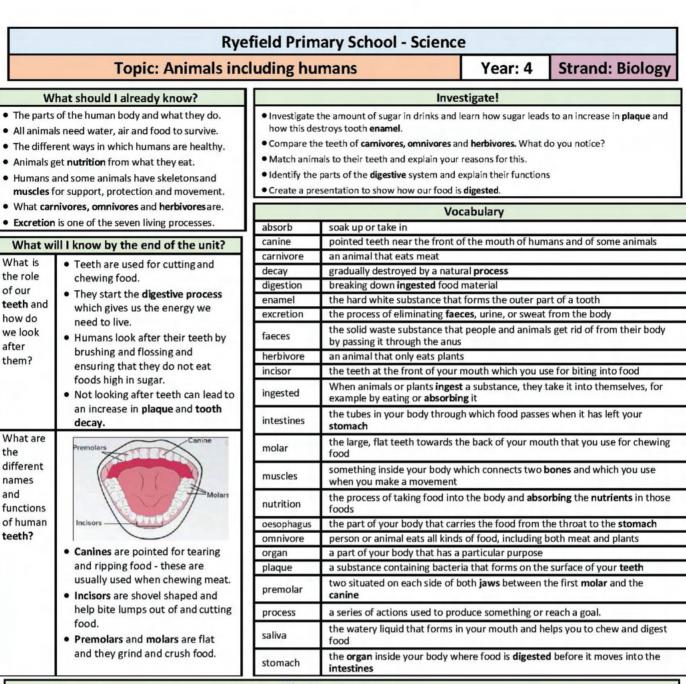
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	Show what you know. Recall two things on the topic.	Connect - can you link this to one more thing that you know.
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### Science - Summer Term 1

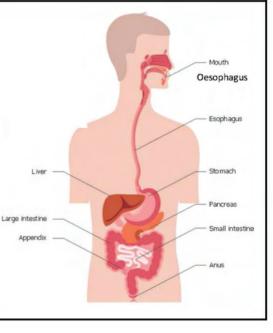
### **Digestion and Nutrition**

9	
What different types of teeth do humans have? Do you know their names?	Answer
What different jobs do our different teeth do?	Answer
What happens to food after we've swallowed it?	Answer
What role do teeth play in our digestive system?	Answer
What is a food chain?	Answer
How can we keep our teeth healthy?	Answer



#### The Digestive System

- The smell of food triggers saliva to be produced.
- The digestive system begins with the mouth and teeth where food is ingested and chewed.
- · Saliva is mixed with the food which helps to break it up.
- · When the food is small enough to be swallowed, it is pushed down the oesophagus by muscles to the stomach.
- · In the stomach, food is mixed further.
- The mixed food is then sent to the small intestine which absorbs nutrients from the food.
- Any leftover broken down food then moves on to the large intestine.
- The food minus the nutrients arrives in the rectum where muscles turnit into faeces. It is stored here until it is pushed out by the anus. This is called excretion.



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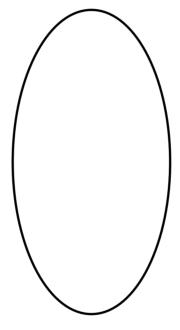
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National curriculum	Animals, including humans: digestion
Year 3	identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat
Year 3	identify that humans and some other animals have skeletons and muscles for support, protection and movement
Year 4	describe the simple functions of the basic parts of the digestive system in humans
Year 4	identify the different types of teeth in humans and their simple functions
Year 4	construct and interpret a variety of food chains, identifying producers, predators and prey





Before starting the topic, add what you already know.

# What is this picture telling me?



What different types of teeth do humans have? Do you know their names?	Answer
What different jobs do our different teeth do?	Answer
What happens to food after we've swallowed it?	Answer
What role do teeth play in our digestive system?	Answer
What is a food chain?	Answer
How can we keep our teeth healthy?	Answer

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	Show what you know. Recall two things on the topic.	Connect - can you link this to one more thing that you know.
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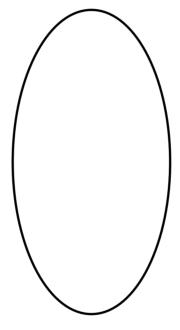
	show what you know. Recall two things on the topic.	Connect - can you link this to one more thing that you know.
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Science - Summer Term 2		
	Habitats	
What is a habitat?	Answer	
What different types of habitat can you think of?	Answer	
How and why might the conditions of a habitat change?	Answer	
What is the difference between natural and man-made changes to a habitat?	Answer	
What is climate change?	Answer	
How can humans help protect animals and their habitats?	Answer	

What vou should already know	alreadu know	Classification of Plants	n of Plants
	-All around us, there are some things that	Flowering Plants	Non-Flowering Plants
	are <u>alive</u> , some things that are <u>dead</u> , and some things that have <u>never been alive.</u>	Howering plants grow flowers. They use pollinction in order to reproduce.	Non-flowering plants do not grow flowers. They rely on seed dispersal in order to reproduce.
	-All living things have certain <u>characteristics</u> that help to keep them alive and healthy.	Flowering plants make up about 90% of all species of plant.	Non-flowering plants make up about 10% of all species of plant.
があるというという	-Living things live in habitats that suit	Examples of flowering plants include:	Examples of non-flowering plants indude:
	them, and which provide for their basic needs.	-Sunflower -Daffodil	-Fem -Moss
	-Living things <u>depend</u> on <u>other living</u> things in order to survive.	-Orchid -Orange Tree -Banana Plant	-Algae -Conifer -Seaweed
Classification of Animals	of Animals	Habitat Changes	
M-R-5 C-R-E-N You can remember the seven features of living things by using the acronym MRS GREN (Movement, Respiration, Searchingh Consult Remoduction Extraction and Nutrition	R-E-N sing the acronym MRS GREN (Movement, Respiration, on Eversion and Nutrition		Animals are often adapted to the habitats that they live in. However, habitats can
	-5nails have shells.		change over time, which may present animals and plant life with difficulties.
-They often have hair/fur on their bodies. -Mammals give birth to live young. -Mammals often drink milk from their mothers.	<ul> <li>They have a large muscular foot, which secretes mucus.</li> <li>Their stomach is directly above their muscular foot.</li> <li>Most smalls live underwater.</li> </ul>		Some of these changes are natural, e.g.
Reptiles Reptiles are cold-blooded. They normally lay eggs (but some don't). -Reptiles have scales or scates.	Slugs -Slugs do not have shells. -They have a large muscular foot, which secretes mucus. -Their stomach is directly above their muscular foot.		-The seasons: temperatures rise in the summer and fall in winter. This means that some animals may need to migrate or hibernate.
Amphibians -Amphibians are cold-blooded animals. -Amphibians are coldess skin. It is often permeable.	<ul> <li>Worms</li> <li>Worms have long, narrow badies.</li> <li>Worms do not have limbs (arms and legs).</li> </ul>		<ul> <li>Increased or decreased rainfall can also impact on a habitat. Floods and droughts can dramatically impact on environments.</li> </ul>
Fish are cold-blooded animals.	<ul> <li>Spiders</li> <li>Spiders have eight legs.</li> </ul>		Other habitat changes are man-made, e.g: -Harvesting fossil fuels, deforestation, dredging
- Fish lay eggs.	<ul> <li>Spiders tocates are made or two main pairs.</li> <li>Spiders create silk from their spinneret glands.</li> <li>Spiders lay eggs.</li> </ul>		rivers, bottom trawling, urbanization, filling in wetlands and mowing fields.
<b>Bird</b> s -Birds are warm-blooded. -Birds have feathers, wings and a beak. -Birds lay eggs.	Insects have exoskeletons: hard shell-like coverings of their body. They also have three main body partsThey have antennae on the top of their heads.		-Global warming is thought to be impacting on many habitats.
Vertebrates – Have backbones			Invertabrates – Have no bockbones
Memmole Dantilac Annu	Amphibians 💑 Fish Birds 🎽	Snorik And Strock Wor	Worms Of Sniclary Preate

National curriculum	Living things and habitats: environmental change
Year 2	explore and compare the difference between things that are living, dead, and things that have never been alive
Year 2	identify that most living things live in habitats to which they are suited and describe how different habitats provide the basic needs of different kinds of animals and plants, and how they depend on each other
Year 2	identify and name a variety of plants and animals in their habitats, including micro-habitats
Year 2	describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food
Year 4	recognise that living things can be grouped in a variety of ways
Year 4	explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment
Year 4	recognise that environments can change and that this can sometimes pose dangers to living things





Before starting the topic, add what you already know.

## What is this picture telling me?



What is a habitat?	Answer
What different types of habitat can you think of?	Answer
How and why might the conditions of a habitat change?	Answer
What is the difference between natural and man-made changes to a habitat?	Answer
What is climate change?	Answer
How can humans help protect animals and their habitats?	Answer

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	Show what you know. Recall two things on the topic.	Connect - can you link this to one more thing that you know.
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